The SNF is proud to be one of five founding members of the National Nanofabrication Users’ Network (NNUN), established in 1993 by the National Science Foundation (NSF) to expand access to nanofabrication resources across the U.S. Through its member laboratories, the NNUN provides its users with access, not only to sophisticated nanofabrication tools, but also to the top-notch, experienced staff and the combined community of fellow researchers in nanotechnologies.

As part of its commitment to increasing awareness of nanofabrication technology, the NNUN hosts a number of outreach activities, including topical workshops, courses, conferences, and exhibits. For more information about the NNUN and its activities, check out our website at http://www.nnun.org.

Every summer about fifty undergraduate students from universities and colleges across the country participate in the NNUN Research Experience for Undergraduates (REU) program. The students work with faculty and graduate students on research projects in all areas of nanotechnology. SNF hosts twelve students each summer. At the end of the program, all the REU students working at the different NNUN sites gather for a convocation to present their research results. Funding is provided by NSF, DOD and CIS. See our website at: http://www.cnf.cornell.edu/cnf/REUhomepage.html.

SNF is located in the Paul Allen Center for Integrated Systems (CIS) on Stanford University’s campus. There is easy access from either US101 or I-280. Please visit the Stanford website (http://www.stanford.edu) for complete directions, including searchable maps.
SNF is...  
- A hands-on laboratory serving as the ultimate "sandbox" for micro- and nano-machining  
- A dynamic, interactive community of top-notch researchers  
- A forum where interdisciplinary science is the rule rather than the exception  
- Open to all researchers (industry, government, academic organizations)

Access to SNF

- On-site Use  
  The vast majority of labmembers, many traveling from afar, prefer to come on-site for hands-on access to the facility.
- Remote Use  
  Rather than travel to SNF, a limited number of labmembers with well-defined projects have work performed by our experienced process staff.
- CNRI-MEMS Exchange  
  SNF actively participates in the MEMS Exchange program, which is a network of fab centers providing a vast range of on-demand, MEMS process capabilities. For more information, check http://www.mems-exchange.org.
- Independent Contractors  
  Whether you have a quick job or an extensive project with a difficult deadline to meet, this is a popular option. Although not SNF employees, these are typically experienced SNF labmembers.

Labmember Services

- Individual consultations by Technical Liaisons to help decide whether SNF is right for you
- Personalized training on operation of equipment by experienced staff
- Support and process consultation for any special needs (such as novel materials or chemicals)
- User-scheduled equipment reservations
- Scheduling priority for labmembers who travel to SNF

Equipment

- 10,000 square feet of class 100 cleanroom space
- Full range of micro- and nano-fabrication capabilities  
  - Photolithography  
  - Etching  
  - Thin films deposition  
  - Diffusion processing  
  - Analytical tools
- Device processing on a broad range of substrates  
  - Glasses  
  - Ceramics  
  - GaAs  
  - Electronics grade silicon
- Open 24 hours/day, 7 days/week

Research Gallery

Microelectronics

H.J. Cho, Stanford University

SEM micrograph of Si pillar transistors after surrounding polysilicon gate formation. Each pillar is about 0.6 microns high. These advanced structures are being researched as a possible replacement of the planar transistors used in current integrated circuit technology.

BioMEMS

B. Splawn, F. Lytle, Purdue University

Image of a carpenter ant on a multi-axis force sensor. This device measures the foot forces produced by running insects, and has enabled the first detailed measurements of biomechanical forces produced by ants. The ultimate goal of this work is to develop a new class of biologically inspired robots.

M. Bartsch, T. Kenny, Stanford University

Integrated Optics

Optical Bend

Micrographs of square hollow waveguides, produced by etching a negative pattern into a silicon master which is used to cast a PDMS mold. These waveguides are used to integrate light absorption measurements with analytical separations based on electrophoresis, for "lab-on-a-chip" applications.

Integrated Optics

B. Splawn, F. Lytle, Purdue University

Optical Bend

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